Understanding anthropomorphism in service provision: a meta-analysis of physical robots, chatbots, and other AI

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Abstract

An increasing number of firms introduce service robots, such as physical robots and virtual chatbots, to provide services to customers. While some firms use robots that resemble human beings by looking and acting humanlike to increase customers' use intention of this technology, others employ machinelike robots to avoid uncanny valley effects, assuming that very humanlike robots may induce feelings of eeriness. There is no consensus in the service literature regarding whether customers' anthropomorphism of robots facilitates or constrains their use intention. The present meta-analysis synthesizes data from 11,053 individuals interacting with service robots reported in 108 independent samples. The study synthesizes previous research to clarify this issue and enhance understanding of the construct. We develop a comprehensive model to investigate relationships between anthropomorphism and its antecedents and consequences. Customer traits and predispositions (e.g., computer anxiety), sociodemographics (e.g., gender), and robot design features (e.g., physical, nonphysical) are identified as triggers of anthropomorphism. Robot characteristics (e.g., intelligence) and functional characteristics (e.g., usefulness) are identified as important mediators, although relational characteristics (e.g., rapport) receive less support as mediators. The findings clarify contextual circumstances in which anthropomorphism impacts customer intention to use a robot. The moderator analysis indicates that the impact depends on robot type (i.e., robot gender) and service type (i.e., possession-processing service, mental stimulus-processing service). Based on these findings, we develop a comprehensive agenda for future research on service robots in marketing.